6. Conclusions

Whilst microbial damage to cotton does not cause significant changes in the HVI results, the effects do manifest themselves "downstream" particularly at the dyeing stage.

We have shown that microbial damage to cotton can be minimized by the application of selected chemicals, e.g. acetic acid, Acticide SPX, SDS/borax, to the affected seed cotton by either a spray technique or by addition to the "picker" water. However, the successful use of a biocide during harvest does not remedy the microbial damage that has already occurred prior to harvest and there are problems and perceptions associated with the use of aerial sprays on open cotton bowls prior to harvest. Problems caused by microbial damage must be addressed during the spinning and dyeing procedures.

We have evaluated a wide range of dyeing assistants for their ability to minimize the colour difference that develops between undamaged and microbiologically damaged cotton in conventional dyeing recipes. Whilst many of the dyeing assistants have a small beneficial effect, only Polymer PL and Chitosan are worthy of future investigation.